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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,749	08/30/2001	Charles A. Howland	W0490/7031	8468
24222	7590	12/10/2004	EXAMINER	
MAINE & ASMUS 100 MAIN STREET P O BOX 3445 NASHUA, NH 03061-3445			PIERCE, JEREMY R	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/943,749

Applicant(s)

HOWLAND, CHARLES A.

Examiner

Jeremy R. Pierce

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,8,17-22,28,29,35-38 and 74-79 is/are pending in the application.
- 4a) Of the above claim(s) 74-78 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8,17-22,28,29,35-38 and 79 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment filed on October 6, 2004 has been entered. Claims 1 and 38 have been amended. Claim 80 has been cancelled. Claims 1, 8, 17-22, 28, 29, 35-38, and 74-79 are currently pending with claims 74-78 withdrawn from consideration. Applicant's amendments to claims 1 and 38 and cancellation of claim 80 are sufficient to overcome the 35 USC 112, 1<sup>st</sup> paragraph rejections set forth in section 3 of the last Office Action because the "other than a corespun yarn" and "other than a corespun fiber bundle" language has been deleted from the claims.

### ***Terminal Disclaimer***

2. The terminal disclaimers filed on July 14, 2004 and on July 22, 2004 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of the references used in the Double Patenting rejections has been reviewed and is accepted. The terminal disclaimer has been recorded. The Terminal Disclaimer overcomes the Double Patenting rejections set forth in sections 9 and 10 of the last Office Action.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 8, 17, 18, 29, and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bak et al. (U.S. Patent No. 5,792,555).

Bak et al. disclose a hybrid yarn that consists of two or more filaments (column 3, lines 23-26). The filaments are substantially normal to the cross-section of the bundle because they are interlaced with one another into an intimate mixture (column 3, lines 42-46). The bundle is not corespun. One of the filaments is high modulus filament that has a very high breaking strength (column 4, lines 42-47), and list several materials with breaking strengths greater than 10 g/denier (column 4, lines 50-64). The high modulus filaments may comprise 20-90% of the yarn (column 3, line 66). Bak et al. do not teach dyeing the fiber bundle. It would have been obvious to a person having ordinary skill in the art at the time of the invention to dye the yarn in order to obtain the desired aesthetics. Since Applicant's uniform color density is derived from an intimate blend of fibers, and the fibers of Bak et al. are also formed into an intimate mixture (column 3, line 46), the virtually uniform color density would be inherent to the fiber of Bak et al. upon dyeing. With regard to claim 9, Bak et al. list aramid fibers, liquid crystal polyester fibers, and PBO fibers (column 4, lines 50-64). With regard to claim 17, Bak et al. list various polyolefins, polyamides, and polyester (column 5, lines 13-39). With regard to claim 18, selection of an appropriate dye would be necessary, and therefore obvious to a person skilled in the art in order to sufficiently dye the selected yarn. With regard to claim 29, selection of a dye that is lighter in color than the undyed color of the high

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strength yarns would be obvious to a person skilled in the art, since it is a matter of choosing a certain dye color. With regard to claims 35-37, the yarn is woven into a fabric (column 3, line 16).

5. Claims 1, 8, 17, 18, 29, 35-38, and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandor et al. (U.S. Patent No. 5,597,649).

Sandor et al. disclose a cut resistant yarn made by combining two different types of fiber (Abstract). One of the fibers has a tensile strength of greater than 10 g/denier (column 2, line 15) and this high strength fiber makes up at least 5% by weight of the yarn (column 5, lines 11-13). The filaments may be intermingled into a composite yarn by standard methods, such as an air jet (column 4, lines 51-56), so the fibers would be oriented substantially normal to the cross-section. The yarn is not corespun. Sandor et al. do not teach dyeing the fiber bundle. It would have been obvious to a person having ordinary skill in the art at the time of the invention to dye the yarn of Sandor et al. in order to obtain the desired aesthetics. Since Applicant's uniform color density is derived from an intimate blend of fibers, and the fibers of Sandor et al. are also formed from an intimate mixture that is created by intermingling the filaments (column 4, lines 51-56), the virtually uniform color density would be inherent to the fiber of Sandor et al. upon dyeing. With regard to claim 9, Sandor et al. disclose aramid and liquid crystal polyester fibers (column 2, lines 18-49). With regard to claim 17, Sandor et al. disclose using polyamide, polyester, and polyolefin (column 3, lines 1-16). With regard to claim 18, selection of an appropriate dye would be necessary, and therefore obvious to a person skilled in the art in order to sufficiently dye the selected yarn. With regard to

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claim 29, selection of a dye that is lighter in color than the undyed color of the high strength yarns would be obvious to a person skilled in the art, since it is a matter of choosing a certain dye color. With regard to claims 35-37, the yarn is used to create a woven fabric (column 5, line 24). With regard to claim 79, Sandor et al. disclose the fabric to weigh as low as 12 osy (Table 1), but fail to disclose a fabric weight of not more than 10 osy. However, a person skilled in the art would know to lower the basis weight to make a lighter fabric and lighter protective clothing article. This would offer greater comfort to the wearer at the sacrifice of losing some of the fabric's ability to resist cuts and punctures. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use a fabric weight of not more than 10 osy in the fabric of Sandor et al. in order to create a lighter weight garment for the wearer.

6. Claims 19-22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandor et al. in view of Howland (U.S. Patent No. 5,837,623).

With regard to claims 19-21, Sandor et al. do not teach the cotton or worsted system of spinning. Howland teaches a penetration resistant garment that is woven with composite yarn that comprises high strength and low strength fibers (Abstract). Howland also discloses that spun staple yarns are useful for manufacturing protective clothing (column 7, line 44) because of the decreased price in using such yarn (column 7, line 56). Howland teaches using either the cotton or wool system of spinning with staple fibers that are 1.5 inches in length is useful in creating a tightly woven substrate (column 7, lines 43-61). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use staple fiber yarn of Howland in the fabric of

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Sandor et al. in order to save on the cost of creating the yarn, as taught by Howland. With regard to claim 22, Howland teaches twisting the staple fibers together to form a yarn. It would have been obvious to a person having ordinary skill in the art at the time of the invention to twist with a multiplier of at least 2.7 in order to create a yarn that is sufficiently held together to be useful in the protective clothing. With regard to claim 28, the number of fibers in any given cross-section is a result effective variable that would affect the overall denier of the yarn. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use between about 60 and about 100 fibers in any given cross-section along the length of the fiber in order to create a yarn with appropriate denier size, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Response to Arguments***

7. Applicant's arguments filed July 14, 2004 have been fully considered but they are not persuasive.
8. Applicant argues that an intimate blend clearly indicates a staple yarn made up of staple fibers, and is on its face exclusive of continuous filament corespun yarn. The Examiner disagrees. Applicant points to no conclusive evidence which links the term "intimate blend" to necessitating staple fibers. Applicant also does not define "intimate blend" in the present specification. However, one definition for "intimate blend" can be found in U.S. Patent No. 6,668,868 to Howland et al.. At column 6, lines 37-42, "intimate

blend yarn or fiber bundle" is defined as "a yarn or fiber bundle including therein at least two different types of fibers, and in some instances a plurality of different types of fibers, such that each fiber type is in direct and intimate contact with fibers of at least one other type within the yarn or fiber bundle." While this definition requires at least two different fibers, there is no clear exclusion of continuous fibers nor is there any preference for staple fibers.

9. Applicant argues that Bak and Sandor et al. uses continuous filaments and not the staple yarns and intimate blend to which the present invention is limited. However, as set forth above, the Examiner does not agree that the current "intimate blend" language is limiting to staple fibers. Additionally, Sandor et al. teach that the composite yarn may comprise staple fiber (column 2, lines 4-8).

In response to applicant's argument that there is no suggestion to combine the Sandor et al. and Howland references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Howland provides the motivation for creating higher penetration resistance by using a tighter weave.

### **Conclusion**



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10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Pierce whose telephone number is (571) 272-1479. The examiner can normally be reached on Monday-Thursday 7-4:30 and alternate Fridays 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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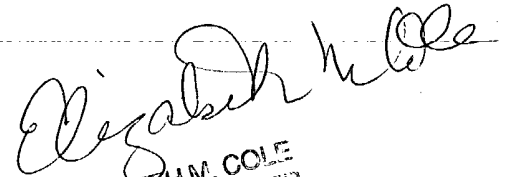
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JRP

JRP

December 2, 2004

  
ELIZABETH M. COLE  
PRIMARY EXAMINER